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PREDICTING DRUG USE IN THE U.S. ARMY

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INDIVIDUAL TRAINING & SKILL EVALUATION TECHNICAL AREA

U. S. Army

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PREDICTING DRUG USE IN THE U.S. ARMY

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PREDICTING DRUG USE IN THE U.S. ARMY

To combat the abuse of drugs among its personnel, an organization (either an entire society or a part of that society, such as the military) must first identify the sources and patterns of that abuse. Is such abuse indigenous to the organization itself or to characteristics that individuals bring into the organization? Further, do the factors which correlate with drug abuse show the same or different patterns for different drugs? Once these questions are answered, more effective intervention strategies may be developed and implemented.

Previous investigations of drug use among military personnel have produced varying results, depending on the samples selected and the variables examined. A study of Navy personnel, for example, reported that the intensity of drug use was "related to indices of behavior acting out, pessimism, and to feelings of helplessness and separation from others."[1] Another study reported that intensity of drug use was related to social rebellion, as measured by the Comrey Personality Scale.[2] A third investigation, this time of 42 heroin users in the U.S. Navy, found usage associated with poor familial relationships, difficulties in school, and difficulties in the Navy.[3] A study of drug use among U.S. Army enlisted men reported that "drug users tended to be younger, less well educated, to come from larger cities, to be single, and more often reared in broken homes."[4]

Although these and other inquiries concerning the correlates of drug-taking behavior have undoubtedly provided the policy maker and military staff officer with much-needed information, they have failed to take into account potentially important distinctions between use of different classes of drugs, and the relation of pre-service drug-use behavior to that same behavior in the military.

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[1] Bucky, S. F., Edwards, D., and Thomas, E. D. Intensity: The Description of a Realistic Measure of Drug Use. Journal of Clinical Psychology, 1974, 30, 161-163.

[2] Knecht, S. D., Gundick, B. P., Edwards, D., and Gunderson, E. K. E. The Prediction of Marihuana Use From Personality Scales. Journal of Educational Psychology and Measurement, 1972, 32, 1111-1117.

[3] Bucky, S. F. The Relationship Between Background and Extent of Heroin Use. American Journal of Psychiatry. 1973, 130, 709-710.

[4] Robins, L. N., Davis, D. H., and Goodwin, D. W. Drug Abuse by U.S. Army Enlisted Men in Vietnam: A Follow-up on Their Return Home. American Journal of Epidemiology, 1974, 99, 242.

Because the pre-service user and non-user may bring different behavior patterns to the organization, such a methodological distinction appears necessary to clarify the dynamics of substance use in the military. Similarly, it appears necessary to distinguish between the use of varying types of drugs. For although drug use, per se, is illegal, the use of certain classes of drugs (e.g., opiates) is generally regarded as a more severe problem than the use of other types (e.g., marihuana).

The present investigation was designed to assess the types of variables associated with different classes of drugs within a sample of enlisted men in the U.S. Army. Consideration was given to a range of explanatory variables (social background, personality, and the military environment), and to the possibility that the effect of each of these variables might be different for different classes of drugs. In order to hold constant the effects of reported pre-service drug experience, those individuals who reported use of these substances before entering the Army were considered separately from those who reported no civilian use of these substances.

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METHOD

SAMPLE

The data to be reported were collected between October 1973 and January 1974 via a self-administered anonymous questionnaire returned by 1,106 U.S. Army enlisted men at installations in the continental U.S., Alaska, and West Germany. Although the sample population selected seemed to reflect the Army in terms of broad organizational and environmental characteristics (e.g., type of unit, racial ancestry of respondents, time in service of respondents), these data should not be considered representative of the U.S. Army as a whole.

The data in Table 1 indicate some of the social background and military characteristics of the sample at the time of data collection. As a general description of the men, it might be said that they were volunteers who were assigned to combat units in the continental U.S. or Germany, who had been in the Army between 1 and 3 years, were E3's, were single, white, had completed high school (or equivalent GED), and were in their early twenties.

CRITERION MEASURES

Respondents were asked to report their levels of use of five illicit drugs or drug families (marihuana, stimulants, depressants, hallucinogens, and opiates), both before entering the Army and after joining their present units. To facilitate subsequent analyses, reported levels of use for each of these substances were coded to indicate frequency of use per year. Thus, a "never used" response was coded as zero; once or twice a year was coded 1.5;

Table 1

SELECTED SAMPLE CHARACTERISTICS

Age:		Mode of Entry:	
17-19	26%	Volunteer	85%
20-22	33%	Draftee	15%
23 and over	41%		
Education:		Type of Unit Assignment:	
Non-high school	18%	Trainee	14%
High school or GED	52%	Combat	60%
Beyond high school	30%	Support	26%
Race:		Geographic Location:	
White	61%	Continental U.S.	56%
Non-white	39%	Alaska	9%
		FRG	35%
Marital Status:		Rank:	
Single	56%	E1 - E2	34%
Married	40%	E3 - E4	40%
Other	4%	E5 and over	26%
		Length of Service:	
		Under 6 mos	12%
		6 mos - 1 yr	11%
		1 - 3 yrs	48%
		3 - 5 yrs	7%
		5 - 7 yrs	22%

three to ten times a year as 6.5; once or twice a month as 18; once or twice a week as 78; and daily or almost daily as 200.

These numerical values were converted to logarithms before the computations were performed to associate them with predictor variables. This conversion was made to prevent the extreme values (especially the "200" times per year category) from dominating the results of regression analysis, because logarithmic transformation reduces the sizes of intervals in direct proportion to their distances from the zero point. Thus, a value of 1.5 is changed to 1.2; a value of 200 is changed to 5.8.

PREDICTOR MEASURES

A total of 35 variables were used to explain reported drug use. These were grouped into three broad categories: social background characteristics (18 variables), personality measures (4 variables), and military environment characteristics (13 variables). Social background characteristics were concerned with such issues as pre-service delinquency and problems in school,[5] as well as with such conventional factors as age, education level, and marital status. The personality measures included a "response to authority" measure,[6] a "concern with status" measure,[7] and a "social responsibility" measure.[8] Military environment characteristics included measures of the respondent's perception of his military unit in terms of performance, physical appearance, the presence of leadership,[9] racial discrimination,[10] as well as the respondent's satisfaction with his job

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[5] Littlepage, G. E., and Fox, L. J. An Analysis of AWOL Offenders Awaiting Disposition. U.S. Army Correctional Training Facility, Fort Riley, Kansas. Technical Report No. 190-1-508(b), 1972.

[6] Berkowitz, N. H., and Wolkon, G. H. A Forced Choice Form of the F Scale--Free of Acquiescent Response Set. Sociometry, 1964, 27, 54-65.

[7] Kaufman, W. C. Status, Authoritarianism, and Anti-Semitism. American Journal of Psychology, 1957, 62, 359-382.

[8] Berkowitz, L. and Lutterman, K. The Traditionally Socially Desirable Personality. Public Opinion Quarterly, 1968, 32, 169-185.

[9] Fleishman, E. A. The Leadership Opinion Questionnaire. In R. Stodgill and A. Coons (Eds.), Leadership Behavior: Its Description and Measurement, Columbus, Ohio: Ohio State University, 1957.

[10] Stoloff, P. H., et al. Development of the Navy Human Relations Questionnaire. Research Contribution 233, Arlington, Virginia: Center for Naval Analyses, Institute for Naval Studies, 1972.

in the Army,[11,12] the availability of recreational facilities, and his living quarters.

PROCEDURES

To more effectively analyze the concomitants of drug use, the data on reported use of each of the five substances were subjected to a hierarchical cluster analysis using the centroid method.[13] This analysis resulted in a three-cluster solution: 1) marihuana, 2) stimulants, depressants, and hallucinogens; and 3) opiates.

A preliminary analysis (see Table 2) had revealed that reported pre-service use of a given substance was highly correlated with reported current use. Accordingly, the respondents were divided into two groups: those who had reported using drugs before entering the Army, and those who had not.

Table 2

CORRELATION OF PRE-SERVICE SUBSTANCE USE WITH CURRENT USE

Substance	Tau(b)	Gamma	Pearson r
Marihuana	.577	.712	.660
Stimulants	.506	.710	.542
Depressants	.529	.750	.567
Hallucinogens	.512	.762	.556
Opiates	.424	.732	.432

Note. All reported correlations are statistically significant at the .001 level.

[11] Taylor, J. C. and Bowers, D. G. Survey of Organizations: A Machine Scored Standardized Questionnaire Instrument. Ann Arbor, Michigan: Center for Research on the Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1972.

[12] Merton, R. K., Reader, G. G., and Kendall, P. L. (Eds.). The Student Physician: Introductory Studies in the Sociology of Medical Education. Cambridge, Massachusetts: Harvard University Press, 1957.

[13] Johnson, S. C. Hierarchical Clustering Schemes. Psychometrika, 1967, 32, 241-254.

Analysis of the criterion measures proceeded in three stages. In the first stage, each of the three categories of substances were regressed in stepwise mode on the social background measures, then again on the personality measures, and finally on the environmental measures. In the second stage, the statistically significant ($p<.05$) social background and personality measures obtained in the first stage were combined to predict substance use via single multiple (as opposed to stepwise) regressions. In the third stage, the statistically significant environmental measures from the first stage were combined with measures from the second stage.

These three stages of analysis were carried out three times for each of the three substance categories, once for pre-service non-users, once for pre-service users, and once for the two groups combined. The following results are based on the third stage regression models for each of the three categories of substance use.

RESULTS

The regression procedures[14] indicated that reported marihuana use was found to be the most "predictable," with an explained variance of 39.2% for all users. For the pre-service non-users and users, the explained variances were 22.3% and 17.2%, respectively.

For the combination category cluster of stimulants, depressants, and hallucinogens, the explained variance was 16.5% for pre-service non-users, 18.9% for pre-service users, and 28% for the two groups combined.

Use of opiates showed widely divergent results. The explained variance for pre-service non-users was 6.6% as compared with 37.5% for the sample of pre-service users. For both groups combined, explained variance was 13.4%. This marked variability may well be a function of the exceedingly small sample size (N = 66) for the pre-service users of opiates.

Inspection of statistically significant partial correlation coefficients (Table 3) for the final regression equations of the three groups (pre-service users, non-users, and the total sample) reveals that most of the explained variation in reported drug use was accounted for by the social background characteristics that these men brought with them into the Army. Of the nine social background variables that were found to be significantly related to reported drug use for one or more of the three categories of substances considered, six were measures of the individual's adaptive abilities in his pre-service environment. That is, they involved problems with law enforcement officials or school authorities, and acts of civilian delinquency.

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[14] The r^2 reported do not take into account "shrinkage." Appropriate shrunken r's are presented in Table 3.

Table 3

STATISTICALLY SIGNIFICANT PREDICTORS OF ILLICIT DRUG USE FOR PRE-SERVICE NON-USERS, PRE-SERVICE USERS, AND THE COMBINED GROUPS

	Pre-Service Non-Users			Pre-Service Users			Total		
Variable	Marihuana	Stimulants Depressants Hallucinogens	Opiates	Marihuana	Stimulants Depressants Hallucinogens	Opiates	Marihuana	Stimulants Depressants Hallucinogens	Opiates
Social Background:	(N=484)	(N=648)	(N=823)	(N=370)	(N=237)	(N=66)	(N=884)	(N=878)	(N=895)
Minor Pre-Service Delinquency	---	---	---	+.113	---	---	+.184	---	---
Major Pre-Service Delinquency	+.151	+.106	---	---	---	---	+.126	+.181	+.132
Marital Status	-.128	-.103	---	-.129	-.200	---	-.157	-.140	---
Pre-Service Convictions	---	---	---	---	---	+.538	---	+.135	+.138
School Suspensions	---	---	---	+.134	+.180	---	---	+.126	---
School Expulsions	---	+.151	+.087	---	---	---	---	---	+.089
Age	---	---	---	-.087	-.145	---	-.086	---	---
Pre-Service Arrests	+.136	+.127	+.121	---	---	---	---	---	---
Broken Home	-.098	---	---	---	---	---	---	---	---
Personality:									
Acceptance of Authority	-.122	-.089	---	-.151	---	---	-.162	-.123	-.069
Social Responsibility	---	---	-.118	---	---	---	-.070	-.072	-.106
Environmental Measures:									
Job Satisfaction	---	---	---	-.113	---	---	-.142	---	---
Unit Conduct	---	---	---	+.161	---	+.317	+.109	---	---
General Race Discrimination	---	---	+.079	---	---	---	---	---	+.105
Unit Race Discrimination	---	---	---	+.105	---	---	---	---	---
Financial Problems	---	---	---	---	---	+.295	---	---	---
% Variance Explained	22.3%	16.5%	6.6%	17.2%	18.9%	37.5%	39.2%	28.0%	13.4%
Shrunken r	.16	.12	.03	.09	.05	.03	.36	.25	.10

Note. Variables are arranged by major grouping, and within each grouping by rough order of magnitude. Only variables for which $p < .05$ are listed here.

For marihuana and stimulant-depressant-hallucinogen users, being single was positively related to use regardless of whether the respondent had used them as a civilian. Individual responses to the "acceptance of authority" measure were found to have a significant negative relation to reported marihuana use. Responses to the "social responsibility" measure were also found to have a significant negative relation to reported drug use for all three drug categories for the total sample and for those pre-service non-users who now report having used opiates.

The environmental measures showed scattered results. No environmental measure was found to be a significant predictor of stimulant-depressant-hallucinogen use. For pre-service non-users, the general racial discrimination measure was positively related to reported opiate use. For pre-service users and for the total sample, reported marihuana use was significantly related to the individual's expressed satisfaction with his work in the Army, and to his perceptions of his unit's military conduct.

Of particular interest here is the very minor impact that the environmental measures were found to have on reported substance use among pre-service non-users. It might have been expected that individuals who reported no drug use before entering the Army might have been influenced to use drugs by their "new" environment, and by the possibly greater availability of drugs in that environment. The data from this research effort, however, indicate that reported substance use in the Army among pre-service non-users was explained primarily by their social background characteristics, especially by the extent of reported pre-service arrests, school expulsions, and pre-service delinquency.

It is also noteworthy that the respondents' military environment played a significant role in the use of only one substance and that only for previous users: marihuana. The military environment encountered by pre-service users apparently facilitated marihuana use, but that same environment was not a direct cause for reported marihuana use among pre-service non-users.

CONCLUSIONS

This investigation reveals that the correlates of reported illicit drug use among Army personnel are strongly related to characteristics that the individual brings with him to the Army, and do not appear to be strongly related to events the individual encounters after he enters the organization. While these findings appear to suggest that screening mechanisms designed to eliminate the civilian delinquent as a recruit may enhance the Army's efforts to reduce drug use, the low predictability of such screening does not appear to be cost effective.

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